

Increased Magnitude, Frequency and Geographical Spread of Harmful Algal Blooms in Puget Sound

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Abstract

Puget Sound has a long history of paralytic shellfish poisoning (PSP) in its northern basins. We have examined the general trends for PSP in Puget Sound using forty-five years of data collected by the Washington State Department of Health (WDOH). Although the dataset has certain limitations, including the lack of consistency in number of samples and collection sites, we conclude that the approximately ten-fold increase in maximal levels of paralytic shellfish toxins is not due to increased sample frequency. Since 1978, historically unaffected areas within southern Puget Sound have experienced more frequent and intense outbreaks of PSP indicating a southward spread of toxigenic algae over the past four decades. By 1988, the first shellfish harvest closures occurred in the southern areas of Puget Sound. A combination of factors may have contributed to this geographical spread including increased urbanization and population and the movement of *Alexandrium* cells and/or cysts past sills from northern Puget Sound into the central and southern basins.